

Parameter space analysis

Points10 / 10

My submissions1 / 1

Deadline Friday, 12 May 2023, 19:00
To be submitted alone

You have used the allowed amount of submissions for this assignment.

Tolerance

Question 110 / 10

Given $R=0.25$, $E=0.1$, $P=0$, $n=10$, $m=10$, among the following candidate values of T , which is the smallest T value that prevents extreme opinion polarization among the agents (i.e., so that the opinion variance of the agents after 250000 iterations is smaller than 0.15)?

☐ 0.1

☐ 0.3

☒ 0.5

☐ 0.7

Correct!

Submit

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Responsiveness

Question 110 / 10

Based on the heatmap you see, which of R and T has a larger effect on opinion polarization under the model (i.e., when this parameter changes, there is a larger change in the opinion variance of agents)?

☐ R

☒ T

Correct!

Submit

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Exposure

Question 110 / 10

Plot the opinion variance curves under the setting of $T=0.2$, $R=0.25$, $P=0$, $n=10$, $m=10$, $t_{\text{max}}=100000$, and E taking respectively 0.05, 0.1, 0.15, 0.2, and 0.25. Does increased E (i.e., increased exposure to agents to different opinions) mitigate or exacerbate opinion polarization?

(Does it match your intuition? Why do you think it is the case under this model?)

☐ Mitigate

☒ Exacerbate

Correct!

Submit

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Self-interest

Question 110 / 10

Given $T=0.1$, $R=0.25$, $E=0.1$, $n=10$, $m=10$, among the following candidate values of P , which is the smallest P value that prevents extreme opinion polarization among the agents (i.e., so that the opinion variance of the agents after 250000 iterations is smaller than 0.15)?

☐ 0.00

☒ 0.01

☐ 0.02

☐ 0.03

☐ 0.04

Correct!

Submit

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External shock

Question 110 / 10

Given $T=0.1$, $R=0.25$, $E=0.1$, $P=0$, $n=10$, $m=10$, $t_{\text{shock}}=50000$, among the following candidate values of Δ , which is the smallest Δ value that prevents extreme opinion polarization among the agents (i.e., so that the opinion variance of the agents after 250000 iterations is smaller than 0.15)?

☐ 0.1

☐ 0.3

☐ 0.5

☐ 0.7

☒ 0.9

Correct!

Submit